

## REMARKS

This Corrected Amendment is being submitted to overcome the objection set forth in the Communication dated November 28, 2006 to the Amendment submitted on October 11, 2006. Claims 19 – 35 filed with the Amendment on October 11, 2006 were indicated in the Communication dated November 28, 2006 as being drawn to a non-elected invention that is independent and distinct from the originally claimed invention. Claims 19-33 have been amended to depend from one of the original claims, and new claim 34 is added by way of this Corrected Amendment.

In the final office action, claims 1-14 remained pending in the application, of which claims 1-14 presently stand rejected. Claims 15-18 have not been examined pursuant to a restriction requirement. New claims 19-34 have been added to provide a more complete scope of protection. Claims 1, 5, 6, 12 and 13 have been amended to more clearly describe Applicants' invention. No new matter has been added. In view of the amendments above and arguments set forth below, reconsideration of rejected claims 1-14 and new claims 19-34 and allowance of the same is respectfully requested.

### **Claim Rejections – 35 U.S.C. § 112, Second Paragraph**

2. The Examiner has rejected claims 1, 2, 5, 7, 8, 9 and 12 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner finds the meaning of “the bit strings” ambiguous. Applicants traverse this rejection.

A bit string is a data structure comprising a string of bits upon which operations can be performed. Applicants claim a number of operations on bit strings, including: storing (claims 1 & 8), shifting (claims 1 & 8), transferring (claims 1 & 8), classifying (claims 5 & 12), rearranging (claims 5 & 12), and reading (claim 9). Data is read from a first storage medium and configured as a bit string for operation by the DMA, then transferred to a second storage

medium. Applicants submit that there should be no ambiguity in this activity. However, Applicants have amended claims 5 & 6 and 12 & 13 to point out that data is transferred to the second storage medium as a bit string. Applicants respectfully request that the rejection be withdrawn.

### **Claim Rejections – 35 U.S.C. § 103(a)**

4. The Examiner has rejected claims 1-4 and 8-11 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,313,607 to *Tokumaru* in view of U.S. Patent No. 4,604,722 to *Staplin et al.* Applicants traverse this rejection.

As to the rejection of **claims 1 and 8**:

The Examiner maintains that the '607 patent to *Tokumaru* "teaches a method for reading and storing data by means of a direct memory access (DMA) medium" as claimed by Applicants, but does not teach "sequentially storing bit strings configuring the read data in a register," a limitation that the Examiner argues is taught by the '722 patent to *Staplin*. Applicants traverse the rejection of claims 1 and 8.

The '607 patent to *Tokumaru* teaches manipulating bytes of data to accommodate misaligned memory storage via application of a selecting signal and a shifting signal. See *Tokumaru*: col. 3, ll. 40-66. These signals originate externally from the DMA controller of *Tokumaru*. See *Tokumaru*: Fig. 4. In contrast, Applicants' claims 1 and 8 recite, inter alia, the DMA "deciding a shift direction." Thus, *Tokumaru* fails to disclose a limitation in addition to the limitation the Examiner acknowledges as not being disclosed by *Tokumaru*, that is, the "sequentially storing bit strings configuring the read data in a register" limitation.

The '722 patent to *Staplin* uses a register, identified as the F-register, to contain a software instruction to implement software shift instructions of the CPU. *Staplin*: col. 9, ll. 17-21. The F-register falls within the control area of the CPU. See *Staplin*: col. 5, ll. 36-40 and Fig. 3, reference numerals 36 and 51. The data shifting disclosed by *Staplin* is an operation of the CPU and not the DMA. In contrast, Applicants claims 1 and 8 recite, inter alia, the DMA "shifting the bit strings by the predetermined number of bits . . . ." Relieving the CPU of such

tasks and implementing them via the DMA is part of the motivation for Applicants' claimed invention. That *Staplin* teaches shifting to occur with a CPU register is contrary to Applicants' claimed invention. Thus, *Staplin* does not add any teaching to the disclosure of *Tokumaru* that would render Applicants' claims 1 and 8 obvious.

Further, because the data shifting taught by *Staplin* is an operation of the CPU and not the DMA, the '722 patent to *Staplin* teaches away from Applicants' claimed invention and thus cannot serve as a secondary reference for the purpose of teaching "sequentially storing bit strings configuring the read data in a register," as claimed by Applicants.

Because *Tokumaru* and *Staplin*, either alone or in combination, fail to teach or suggest one or more limitations recited by Applicants' claims 1 and 8, for at least this reason, Applicants' claims 1 and 8 patentably distinguish from *Tokumaru* and *Staplin* and are allowable over the references.

**As to the rejection of claims 2-4 and 9-11:**

Claims 2-4 depend from independent claim 1, and claims 9-11 depend from independent claim 8. Independent claims 1 and 8 have been amended to more clearly describe Applicants' invention and, as discussed above, are in a position for allowance. Accordingly, claims 2-4 and 9-11 are also allowable since they each depend from an allowable base claim. Neither *Tokumaru* nor *Staplin*, either alone or in combination, teach or suggest the claimed invention herein. Therefore, claims 2-4 and 9-11 are allowable over *Tokumaru* in view of *Staplin*.

5. The Examiner has rejected claims 5-7 and 12-14 under 35 U.S.C. § 103(a) as unpatentable over *Tokumaru* in view of *Staplin*, and in further view of U.S. Patent No. 5,781,763 to *Beukema et al.* Applicants traverse this rejection.

Claims 5-7 depend from independent claim 1, and claims 12-14 depend from independent claim 8. Independent claims 1 and 8 have been amended to more clearly describe Applicants' invention and, as discussed above, are in a position for allowance. Accordingly, claims 5-7 and 12-14 are also allowable since they each depend from an allowable base claim. Neither *Tokumaru* nor *Staplin* nor *Beukema*, either alone or in combination, teach or suggest the claimed

invention herein. Therefore, claims 5-7 and 12-14 are allowable over *Tokumaru* in view of *Staplin*, and in further view of *Beukema*.

### ***In re Larson***

In the "Response to Arguments" sections of the office action, the Examiner cites *In re Larson*, 340 F.2d. 965, 968 (CCPA 1965) for the proposition that "making the source of control integral with the DMA controller is not a patentable distinction over a DMA controller with an external source of control." See Examiner's Action, p. 12. Applicants disagree with this reading of *In re Larson*.

*In re Larson* is directed to a mechanical brake drum apparatus where the court considered the term "integral" as it applies to a mechanical assemblage of parts as contrasted with a single piece construction. The *Larson* court found "that the use of a one piece construction instead of the structure disclosed in Tuttle et al. [several parts rigidly secured together as a single unit] would be merely a matter of obvious engineering choice."

In the instant application, Applicants are not addressing whether several components form together to provide a single construction so *In re Larson* is not controlling.

### ***Conclusion***

In view of the amendments and arguments set forth above, Applicants submit that the present application is in condition for allowance and would appreciate early notification of the same.

### ***Invitation for a telephone interview***

The Examiner is invited to call the undersigned at (202) 659-9076 if further issues remain with allowance of this case.

### ***Deposit Account Authorization***

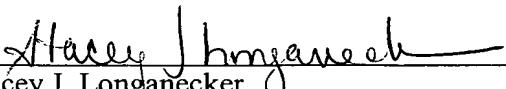
Serial No.: 10/759,232  
Amdt. Dated: December 22, 2006  
Reply to Communication mailed  
November 28, 2006

45927

Although no fee is believed due by submission of this paper, authorization is hereby made to charge any fees due or outstanding, or credit any overpayment, to Deposit Account No. **18-2220** (Order No. 45927).

Respectfully Submitted,

Dated: December 22, 2006

  
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